

## AND481GST/GST-LED

### 2 Lines x 16 Characters

### Intelligent Character Display

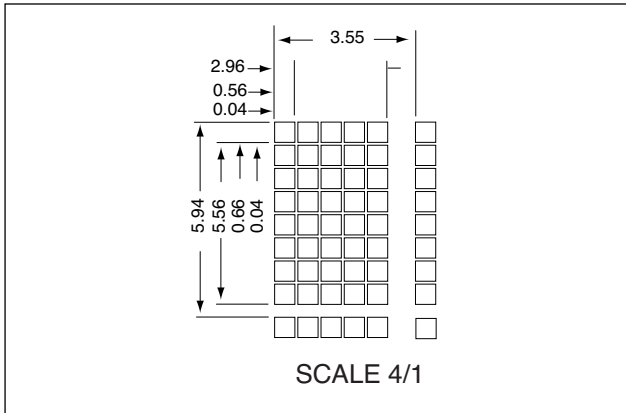
The AND481GST/GST-LED devices are compact, LCD modules that have an on-board LCD controller and driver circuit. These devices can display 160 characters (numerals, letters, symbols and Kana letters), as well as eight custom characters.

#### Features

- 5 x 7 Dots with cursor
- Built-in controller (HD44780U or equivalent)
- 5V Power supply
- 1/16 Duty cycle
- 4.2V LED Forward voltage

• RoHS Compliant

#### • Dot Matrix Dimensions



#### Mechanical Characteristics

Item	Specification	Unit
Outline Dimensions	85.0 (H) x 30.0 (V) x 8.8 (D) (12.7 LED)	mm
Character Size	2.96 (H) x 5.56 (V)	mm
Character Pitch	3.55 (H) x 5.94 (V)	mm
Viewing Area	65.0 (H) x 16.0 (V)	mm
Dot Size	0.56 (H) x 0.66 (V)	mm
Dot Pitch	0.60 (H) x 0.70 (V)	mm

#### Absolute Maximum Ratings

Item	Symbol	Rating	Unit
Supply Voltage	$V_{DD}$	7.0	V
Input Voltage	$V_{IN}$	$0 \leq V_{IN} \leq V_{DD}$	V

#### Absolute Maximum Ratings (Continued)

Item	Symbol	Rating	Unit
LED Forward Current	$I_F$	200	mA
LED Reverse Voltage	$V_R$	8	V
LED Power Dissipation	$P_D$	920	mW
Operating Temperature	$T_{op}$	0 to +50	°C
Storage Temperature	$T_{stg}$	-20 to +60	°C

#### Electrical Characteristics (TA = 25°C)

Item	Symbol	Cond.	Min.	Typ.	Max.	Unit	
LCD Operating Voltage	$V_{DD}-V_O$	T=0 °C	-	4.8	-	V	
		T=25 °C	-	4.5	-		
		T=50 °C	-	4.2	-		
Supply Voltage	$V_{DD}-V_{SS}$	-	4.7	5	5.3	V	
Supply Current	$I_{DD}$	-	-	3.2	6	mA	
Input Voltage	"High" Level	$V_{IH}$	-	2.2	-	$V_{DD}$	V
	"Low" Level	$V_{IL}$	-	0	-	0.6	
Output Voltage	"High" Level	$V_{OH}$	-	2.4	-	-	V
	"Low" Level	$V_{OL}$	-	-	-	0.4	

#### Optical Characteristics (TA = 25°C, f = 0°, q = 0°)

Item	Symbol	Min.	Typ.	Max.	Unit
Viewing Angle	f	-	50	-	degree
Contrast	K	-	6.0	-	-
Turn On	$T_{on}$	-	200	400	ms
Turn Off	$T_{off}$	-	250	400	ms



# AND481GST/GST-LED Intelligent Character Display

## Connector Pin Assignment

Pin No.	Signal	Function
1	V <sub>DD</sub>	5V
2	V <sub>SS</sub>	0V
3	V <sub>O</sub>	Contrast Adj.
4	RS	Register Select
5	R/W	Read/Write
6	E	Enable Signal
7	DB0	Data Bit 0
8	DB1	Data Bit 1
9	DB2	Data Bit 2
10	DB3	Data Bit 3
11	DB4	Data Bit 4
12	DB5	Data Bit 5
13	DB6	Data Bit 6
14	DB7	Data Bit 7

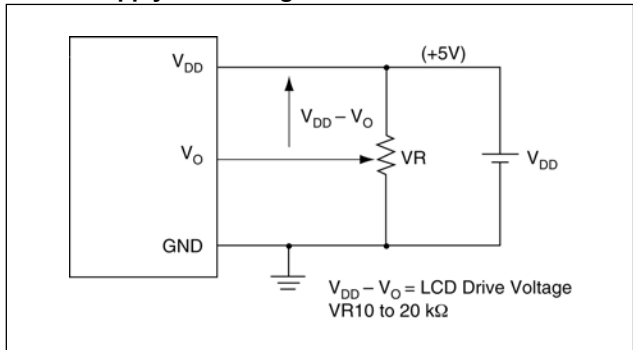
## Power Supply

The LCD panel is driven by the voltage  $V_{DD}-V_O$ , so you need an adjustable  $V_O$  for contrast control and temperature compensation.

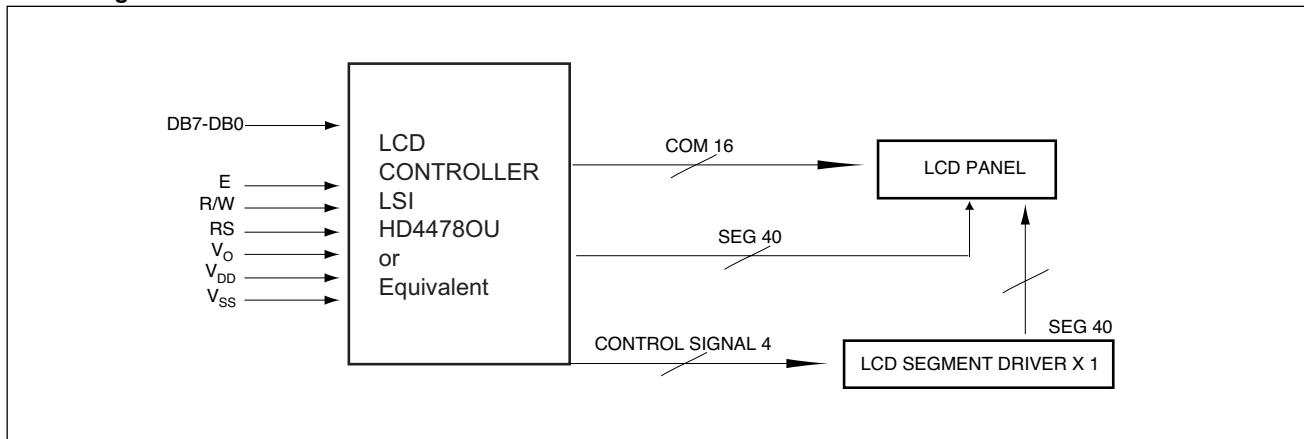
### Temperature Variations

Temperature	V <sub>DD</sub> -V <sub>O</sub>
0°C	5.00
+25°C	4.75
+50°C	4.50

### Power Supply Block Diagram



## Block Diagram



## Dimensional Outline

